

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): ~~An apparatus for accelerating a destruction of a vortex formed at a rear of a wing of an aircraft by a merging of first and second co-rotating eddies,~~  
comprising:

a wing forming a vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy; and

a perturbation device disposed adjacent an area of creation of the first co-rotating eddy, the perturbation device being configured to generate a periodic perturbation having a wavelength configured to excite ~~capable of exciting~~ at least one instability mode of the first co-rotating eddy to accelerate a destruction of the vortex.

Claim 2 (Original): The apparatus according to claim 1, wherein the perturbation device is disposed adjacent a flap of the aircraft.

Claim 3 (Currently Amended): The apparatus according to claim 2, wherein the perturbation device comprises an unstreamlined ~~unstreamed~~ element.

Claim 4 (Currently Amended): The apparatus according to claim 3, wherein the unstreamlined ~~unstreamed~~ element comprises a cylindrical section.

Claim 5 (Currently Amended): The apparatus according to claim 4, wherein the unstreamlined ~~unstreamed~~ element comprises a circular cross section.

Claim 6 (Currently Amended): The apparatus according to claim 4, wherein the unstreamlined ~~unstreamed~~ element comprises an elliptical cross section.

Claim 7 (Currently Amended): The apparatus according to claim 3, wherein the unstreamlined ~~unstreamed~~ element is configured to be extended from and retracted into one of the wing and the flap of the aircraft.

Claim 8 (Previously Presented): The apparatus according to claim 2, wherein the perturbation device comprises a fluid jet.

Claim 9 (Original): The apparatus according to claim 8, wherein the fluid jet is disposed within one of the wing and the flap of the aircraft.

Claim 10 (Currently Amended): An ~~apparatus for accelerating a destruction of a vortex formed at a rear of a wing of an aircraft by a merging of first and second co-rotating eddies,~~ comprising:

a wing forming a vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy; and

means for generating a periodic perturbation having a wavelength configured to excite ~~capable of exciting~~ at least one instability mode of the first co-rotating eddy, the means for generating being disposed adjacent an area of creation of the first co-rotating eddy.

Claim 11 (Previously Presented): The apparatus according to claim 10, wherein the means for generating is disposed adjacent a flap of the aircraft.

Claim 12 (Currently Amended): The apparatus according to claim 11, wherein the means for generating comprises an unstreamlined ~~unstreamed~~ element.

Claim 13 (Currently Amended): The apparatus according to claim 12, wherein the unstreamlined ~~unstreamed~~ element is configured to be extended from and retracted into one of the wing and the flap of the aircraft.

Claim 14 (Previously Presented): The apparatus according to claim 11, wherein the means for generating comprises a fluid jet.

Claim 15 (Previously Presented): The apparatus according to claim 14, wherein the fluid jet is disposed within one of the wing and the flap of the aircraft.

Claim 16 (Currently Amended): ~~An apparatus for accelerating a destruction of first and second contra-rotating vortices formed at a rear of first and second wings of an aircraft; the first contra-rotating vortex being formed by a merging of first and second co-rotating eddies, and the second contra-rotating vortex being formed by a merging of third and fourth co-rotating eddies, the apparatus comprising:~~

a first wing forming a first contra-rotating vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy;

a second wing forming a second contra-rotating vortex at a rear portion thereof by a merging of a third co-rotating eddy with a fourth co-rotating eddy;

a first perturbation device disposed adjacent an end of a first flap of the first wing; and

a second perturbation device disposed adjacent an end of a second flap of the second wing, wherein

the first and second perturbation devices are configured to generate periodic perturbations having wavelengths configured to excite ~~capable of exciting~~ instability modes of the first and third co-rotating eddies, and

diameters of the first and second contra-rotating vortices with excited instability modes are greater than a predetermined proportion of a distance between the first and second contra-rotating vortices.

Claim 17 (Previously Presented): The apparatus according to claim 16, wherein the predetermined proportion is approximately 30%.

Claim 18 (Currently Amended): The apparatus according to claim 1, wherein the periodic perturbation is ~~corresponds to~~ a Benard-von Karman instability.

Claim 19 (Previously Presented): The apparatus according to claim 1, wherein the periodic perturbation induces an increase in three-dimensional elliptic instabilities.

Claim 20 (Previously Presented): The apparatus according to claim 1, wherein the instability mode is an internal instability mode of a core of the first co-rotating eddy.

Claim 21 (Withdrawn): The apparatus according to claim 2, wherein the perturbation device has a diameter transverse with respect to a flow around the wing of the aircraft and the diameter depends on the wavelength of the periodic perturbation.

Claim 22 (Currently Amended): The apparatus according to claim 3, wherein the unstreamlined ~~unstreamed~~ element has a diameter transverse with respect to a flow around

the wing of the aircraft and the diameter depends on the wavelength of the periodic perturbation.

Claim 23 (Currently Amended): The apparatus according to claim 9, wherein the fluid jet emits a fluid ~~is emitted~~ transversally to a flow around the wing of the aircraft and thus to a longitudinal axis of the first co-rotating eddy.

Claim 24 (Currently Amended): The apparatus according to claim 10, wherein the periodic perturbation is ~~corresponds to~~ a Benard-von Karman instability.

Claim 25 (Previously Presented): The apparatus according to claim 10, wherein the periodic perturbation induces an increase in three-dimensional elliptic instabilities.

Claim 26 (Currently Amended): The apparatus according to claim 14, wherein the fluid jet emits a fluid ~~is emitted~~ transversally to a flow around the wing of the aircraft and thus to a longitudinal axis of the first co-rotating eddy.

Claim 27 (Currently Amended): The apparatus according to claim 16, wherein the periodic perturbations are ~~corresponds to~~ Benard-von Karman instabilities.

Claim 28 (Previously Presented): The apparatus according to claim 16, wherein the periodic perturbations induce increases in core diameters of the co-rotating eddies.

Claim 29 (Previously Presented): The apparatus according to claim 16, wherein the periodic perturbations induce increases in three-dimensional elliptic instabilities.

Claim 30 (Previously Presented): The apparatus according to claim 16, wherein the instability mode to be excited is determined from sizes of cores of the eddies and ratios between the sizes of the cores of the eddies and a distance between the eddies.